Advanced Approaches to Wildfire Detection, Monitoring and Surveillance

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Message from the Guest Editors

Dear Colleagues,

Wildfires are natural phenomena with devastating effects on nature and human properties. Many efforts in fire prevention and protection aim to reduce not only the number of fires, but also the extent of fire damage. It is well-known that early wildfire detection and quick, appropriate interventions are the most important measures for minimizing wildfire damage. Once a wildfire has expanded, it becomes very difficult to control and extinguish. Therefore, over the last couple of decades, there have been many efforts to develop an efficient wildfire monitoring system capable of detecting wildfires at initial stages. The rapid development of artificial neural systems and deep learning methods has shifted research from model-based to data-driven and learning-based approaches, offering a new generation of quite successful methods for the early detection of wildfires.

This Special Issue aims to bring together and present recent advanced approaches for wildfire smoke and flame detection, as well as advanced systems for wildfire monitoring and surveillance in various natural environments, from inaccessible forest areas to wildland–urban interfaces (WUIs).

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